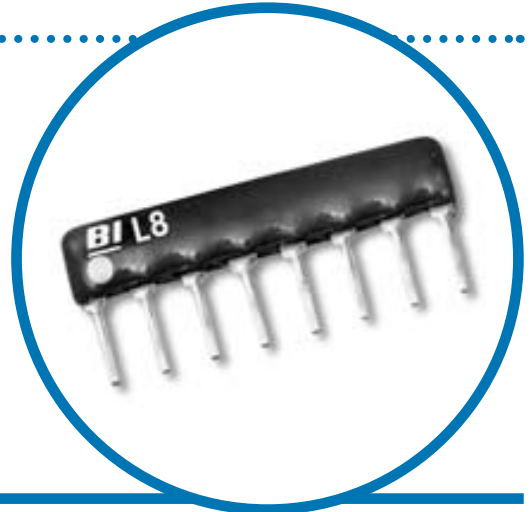


MODEL L SERIES

L Series

- Thick Film
- Low Profile SIP
- Conformal Coated
- Resistor Networks
- RoHS Compliant



Electrical

| | |
|---|---|
| Standard Resistance Range, Ohms | 1%: 22R - 1M; 2%: 10R - 5M6; 5%: 10R - 10M |
| Standard Resistance Tolerance, at 25°C | ±2% Optional: ±1% (F Tol.), ±5% (J Tol.) |
| Operating Temperature Range | -55°C to +125°C |
| Temperature Coefficient of Resistance | ±100ppm/°C (<50 Ohms = ±250ppm/°C) |
| Temperature Coefficient of Resistance, Tracking | ±50ppm/°C |
| Maximum Operating Voltage | 100Vdc or √PR |
| Insulation Resistance | ≥10,000 Megohms |

Environmental

| | |
|---|-------------------------|
| Thermal Shock plus Power Conditioning | ΔR 0.70% |
| Short Time Overload | ΔR 0.25% |
| Terminal Strength | ΔR 0.25% |
| Moisture Resistance | ΔR 0.50% |
| Mechanical Shock | ΔR 0.25% |
| Vibration | ΔR 0.25% |
| Low Temperature Storage | ΔR 0.25% |
| High Temperature Exposure | ΔR 0.50% |
| Load Life, 1,000 Hours | ΔR 1.00% |
| Resistance to Solder Heat (Per MIL-STD-202, Method 210, Cond.B) | ΔR 0.25% |
| Dielectric Withstand Voltage | 200V for 1 minute |
| Marking Permanency | MIL-STD 202, Method 215 |
| Lead Solderability | MIL-STD 202, Method 208 |
| Flammability | UL-94V-O Rated |
| Storage Temperature Range | -55°C to +150°C |

Specifications subject to change without notice.

General Note

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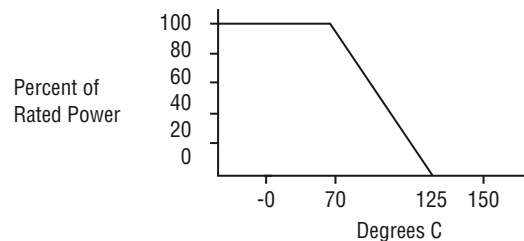
Mechanical

| | |
|--------------------|-----------------------|
| Lead Finish | SnAgCu |
| Substrate Material | Alumina |
| Resistor Material | Cermet |
| Body Material | Conformal Epoxy Resin |

Standard Resistance Values, Ohms Power Derating Curve

| -3 Circuit (Isolated Resistors) & -1 Circuits (Bussed Resistors) | | | | | |
|--|------|------|------|------|------|
| Ohms | Code | Ohms | Code | Ohms | Code |
| 22 | 220 | 820 | 821 | 33K | 333 |
| 27 | 270 | 1K | 102 | 39K | 393 |
| 33 | 330 | 1.2K | 122 | 47K | 473 |
| 39 | 390 | 1.5K | 152 | 51K | 513 |
| 47 | 470 | 1.8K | 182 | 56K | 563 |
| 51 | 510 | 2K | 202 | 68K | 683 |
| 56 | 560 | 2.2K | 222 | 82K | 823 |
| 68 | 680 | 2.7K | 272 | 100K | 104 |
| 82 | 820 | 3.3K | 332 | 120K | 124 |
| 100 | 101 | 3.9K | 392 | 150K | 154 |
| 120 | 121 | 4.7K | 472 | 180K | 184 |
| 150 | 151 | 5.1K | 512 | 200K | 204 |
| 180 | 181 | 5.6K | 562 | 220K | 224 |
| 200 | 201 | 6.8K | 682 | 270K | 274 |
| 220 | 221 | 8.2K | 822 | 330K | 334 |
| 270 | 271 | 10K | 103 | 390K | 394 |
| 330 | 331 | 12K | 123 | 470K | 474 |
| 390 | 391 | 15K | 153 | 510K | 514 |
| 470 | 471 | 18K | 183 | 560K | 564 |
| 510 | 511 | 20K | 203 | 680K | 684 |
| 560 | 561 | 22K | 223 | 820K | 824 |
| 680 | 681 | 27K | 273 | 1Meg | 105 |

| -5 Circuit (Dual Terminators) | | | | | | Power Dissipation, Watts At 70°C | | | | |
|-------------------------------|---------|---------|---------|---------|---------|----------------------------------|---------|------|------|------|
| Ohms | Code | Ohms | Code | Ohms | Code | — Resistor (Per Circuit) — | | | | |
| R1/R2 | R1/R2 | R1/R2 | R1/R2 | R1/R2 | R1/R2 | Model | Package | -1 | -3 | -5 |
| 180/390 | 181/391 | 330/390 | 331/391 | 3K/6.2K | 302/622 | L06 | .6 | .125 | .200 | .125 |
| 220/270 | 221/271 | 330/470 | 331/471 | - | - | L08 | .8 | .125 | .200 | .125 |
| 220/330 | 221/331 | 330/680 | 331/681 | - | - | L10 | 1.0 | .125 | .200 | .125 |

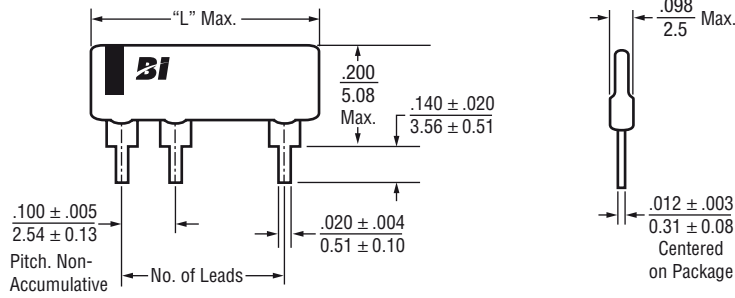


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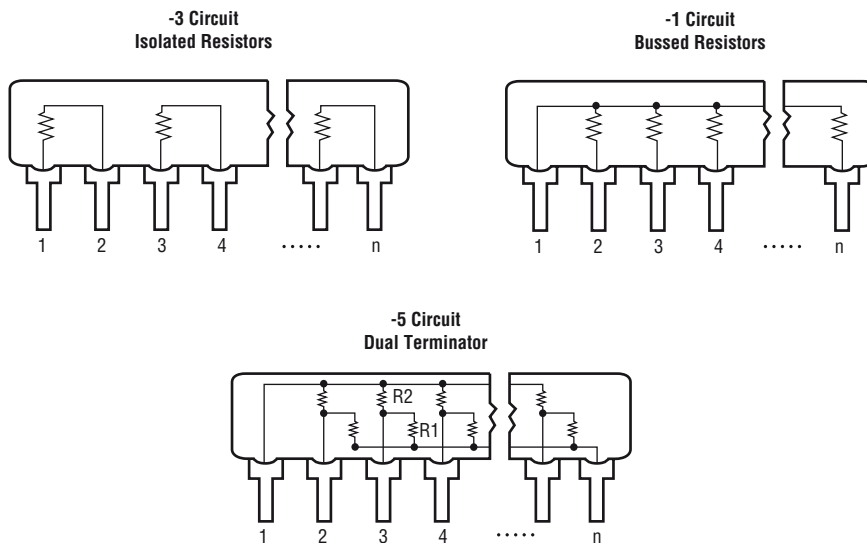


Outline Dimensions (Inch/mm)



| # of Leads | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 |
|---------------|--------------|--------------|--------------|--------------|--------------|--------------|---------------|---------------|---------------|---------------|---------------|
| Dim. "L" Max. | .40 10.16 | .50 12.70 | .60 15.24 | .70 17.78 | .80 20.32 | .90 22.86 | 1.00 25.40 | 1.10 27.94 | 1.20 30.48 | 1.30 33.02 | 1.40 35.56 |

Schematics



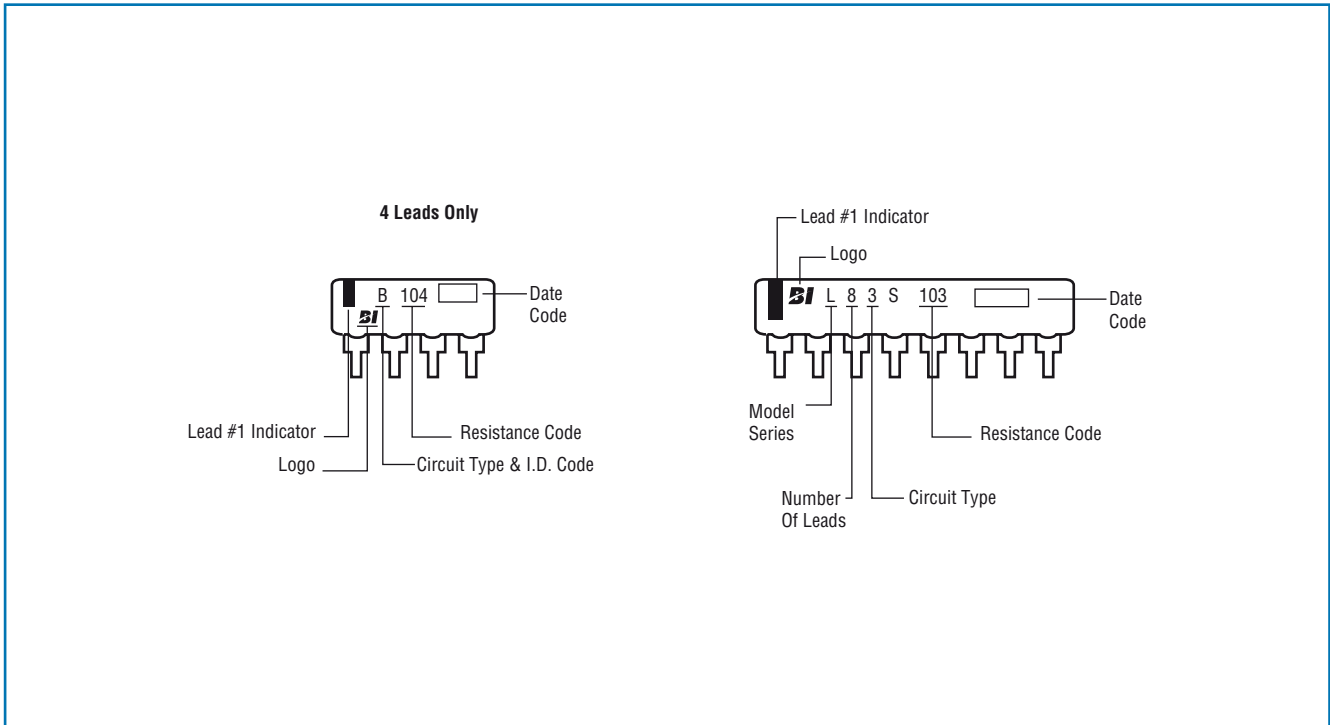
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Typical Part Marking



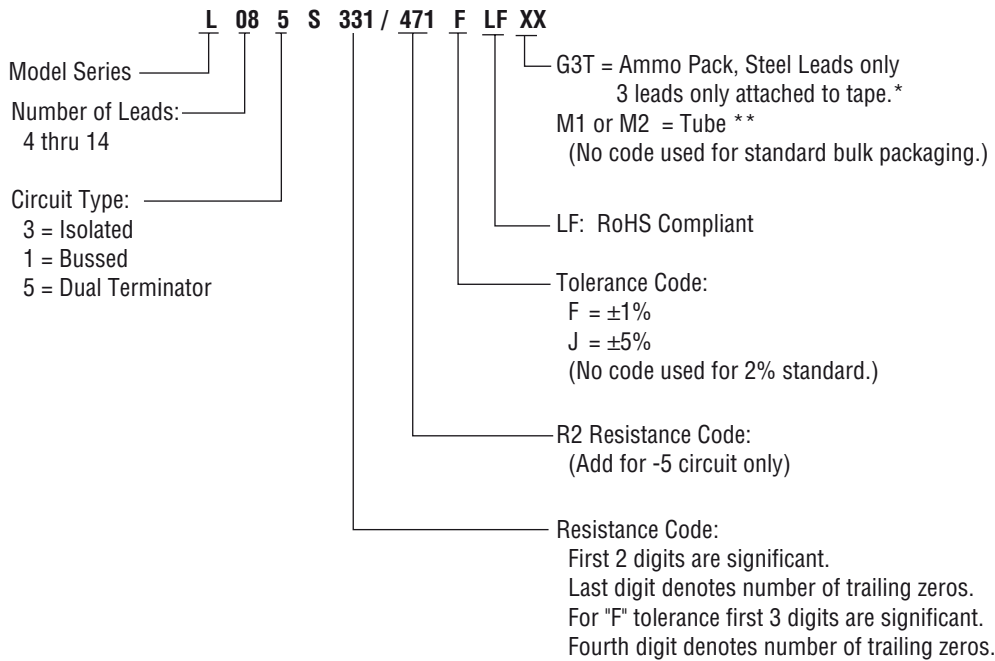
Packaging

| | | | |
|-----------|---|------------|--|
| Standard: | Bulk: | Quantity = | 4 -10 pins: 200 per bag, 1000 per box 11 -14 pins: 100 per bag, 500 per box |
| Option: | Tape in Ammo Box (4 - 10 pins only). All Units oriented with lead #1 to the left of direction of feed. | | |
| | Tape: | Width = | 18mm |
| | | Pitch = | 12.7mm |
| | Ammo Box: | Capacity = | 1,000 units per box. 12,000 units per carton |

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Ordering Information



* Refer to Packaging for Automation section (Page A-3) for Ammo Pack capacity and dimensions.

** Refer to Packaging for Automation section (Page A-4) for M1 and M2 tube capacity and dimensions.

Applicable Documents

| |
|---|
| MIL-R-83401 — Resistor Networks, Fixed, Film, General Specifications |
| MIL-STD-105 — Sampling Procedures and Tables for Inspection by Attributes |
| MIL-STD-202 — Test Methods for Electronic and Electrical Component Parts |

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